**LAB 4:**

**Title : Create a basic Flask application with a route that returns “Hello, World!” when accessed via the browser**

**Code:**

**app.py**

from flask import Flask,render\_template

app=Flask(\_\_name\_\_)

from flask\_mysqldb import MySQL

@app.route('/')

def base():

    return 'Hello,World'

if \_\_name\_\_=='\_\_main\_\_':

    app.run(debug=True)

**Output:**



**LAB 5:**

**Title: Develop a web form using HTML and Flask to capture user input (e.g., name, email) and display the input on another page.**

Code:

**register.html**

{% extends 'base.html' %}

 {% block title %}Register Page{% endblock%}

 {% block content %}

      <div class="col-md-4">

    <h1>User Registration</h1>

    <form method="post" action="/register">

      <label>First Name</label>

      <input type="text" required  class="form-control" name="first\_name" /> <br />

      <label>Last Name</label>

      <input type="text" class="form-control" name="last\_name" /> <br />

      <label>Email</label>

      <input type="email" class="form-control" name="email" /> <br />

      <label>Password</label>

      <input type="password" class="form-control" name="password" /> <br />

      <label>Confirm password</label>

      <input type="password" class="form-control" name="confirm\_password" /> <br />

      <button type="submit" class="btn btn-primary">Signup</button>

      <a href="/login" class="btn btn-secondary">Already have an account? Login Here</a>

    </form>

    </div>

 {% endblock%}

**display.html**

{% extends "base.html" %} {% block title %}Register Success{% endblock %} {%

block content %}

<div class="container mt-5">

  <h1>

    Hi, {{ first\_name }} {{ last\_name }}, hope you are fine! Your email is: {{

    email }}

  </h1>

</div>

{% endblock %}

**app.py**

@app.route("/register", methods=["GET","POST"])

def register\_page():

    if request.method=="POST":

        first\_name = request.form.get("first\_name")

        last\_name = request.form["last\_name"]

        email = request.form["email"]

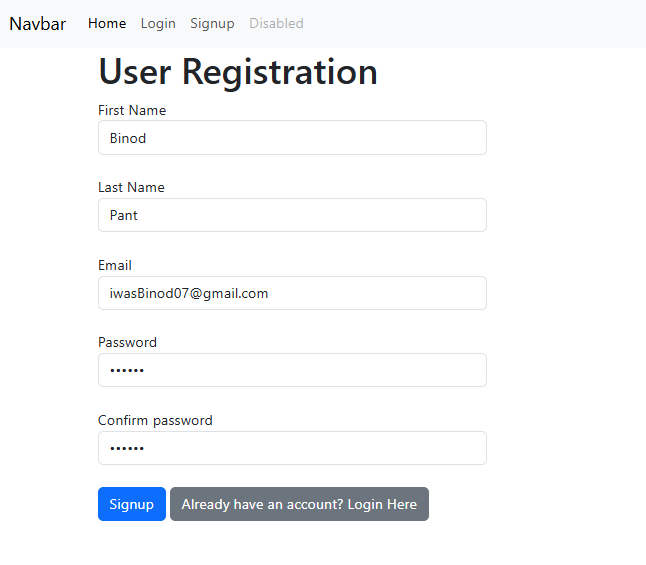
        password = request.form["password"]

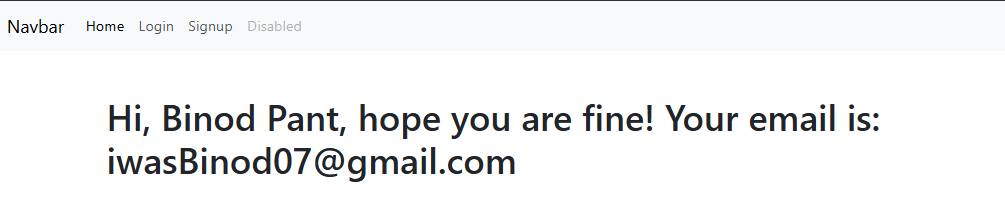
        confirm\_password = request.form["confirm\_password"]

        return render\_template("display.html",first\_name=first\_name, last\_name=last\_name, email=email)

    return render\_template("register.html")

**Output:**





**LAB 6:**

**Title: Write a Flask application that connects to a MySQL database using mysql-connector with Template integration.**

**Code:**

**app.py**

from flask import Flask, render\_template, request, redirect,url\_for, flash

from flask\_mysqldb import MySQL

app = Flask(\_\_name\_\_)

app.config['SECRET\_KEY'] = 'your\_secret\_key'

# Configure MySQL

app.config['MYSQL\_HOST'] = 'localhost'

app.config['MYSQL\_USER'] = 'root'

app.config['MYSQL\_PASSWORD'] = 'root'

app.config['MYSQL\_DB'] = 'flask\_class'

mysql = MySQL(app)

@app.route("/")

@app.route("/home")

def index\_page():

    cur = mysql.connection.cursor()

    cur.execute("SELECT \* FROM user")

    data = cur.fetchall()

    cur.close()

    return render\_template("home.html", users=data)

@app.route("/login", methods=["GET","POST"])

def login\_page():

    if request.method=="POST":

        username = request.form["username"]

        password = request.form["password"]

        if username=='nast' and password=='becomputer':

            return redirect(url\_for("index\_page"))

        else:

            flash("Username/Password not matched!","danger")

            return redirect(url\_for("login\_page"))

    return render\_template("login.html")

@app.route("/register", methods=["GET","POST"])

def register\_page():

    if request.method=="POST":

        first\_name = request.form.get("first\_name")

        last\_name = request.form["last\_name"]

        email = request.form["email"]

        password = request.form["password"]

        confirm\_password = request.form["confirm\_password"]

        #save to database

        cur = mysql.connection.cursor()

        cur.execute("INSERT INTO user(first\_name, last\_name, email, password, status) VALUES (%s, %s, %s, %s, %s)", (first\_name,last\_name, email, password,1))

        mysql.connection.commit()

        cur.close()

        return redirect("/")

    return render\_template("register.html")

if \_\_name\_\_=="\_\_main\_\_":

    app.run(debug=True)

**base.html**

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=\, initial-scale=1.0" />

    <link

      href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.7/dist/css/bootstrap.min.css"

      rel="stylesheet"

      integrity="sha384-LN+7fdVzj6u52u30Kp6M/trliBMCMKTyK833zpbD+pXdCLuTusPj697FH4R/5mcr"

      crossorigin="anonymous"

    />

    <title>{% block title %} Base Title {% endblock%}</title>

  </head>

  <body>

    <nav class="navbar navbar-expand-lg bg-body-tertiary">

      <div class="container-fluid">

        <a class="navbar-brand" href="/">Navbar</a>

        <button

          class="navbar-toggler"

          type="button"

          data-bs-toggle="collapse"

          data-bs-target="#navbarNav"

          aria-controls="navbarNav"

          aria-expanded="false"

          aria-label="Toggle navigation"

        >

          <span class="navbar-toggler-icon"></span>

        </button>

        <div class="collapse navbar-collapse" id="navbarNav">

          <ul class="navbar-nav">

            <li class="nav-item">

              <a class="nav-link active" aria-current="page" href="/">Home</a>

            </li>

            <li class="nav-item">

              <a class="nav-link" href="/login">Login</a>

            </li>

            <li class="nav-item">

              <a class="nav-link" href="/register">Signup</a>

            </li>

            <li class="nav-item">

              <a class="nav-link disabled" aria-disabled="true">Disabled</a>

            </li>

          </ul>

        </div>

      </div>

    </nav>

    <div class="container">{% block content %} {% endblock%}</div>

    <script

      src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.7/dist/js/bootstrap.bundle.min.js"

      integrity="sha384-ndDqU0Gzau9qJ1lfW4pNLlhNTkCfHzAVBReH9diLvGRem5+R9g2FzA8ZGN954O5Q"

      crossorigin="anonymous"

    ></script>

  </body>

</html>

**register.html**

{% extends 'base.html' %}

 {% block title %}Register Page{% endblock%}

 {% block content %}

      <div class="col-md-4">

    <h1>User Registration</h1>

    <form method="post" action="/register">

      <label>First Name</label>

      <input type="text" required  class="form-control" name="first\_name" /> <br />

      <label>Last Name</label>

      <input type="text" class="form-control" name="last\_name" /> <br />

      <label>Email</label>

      <input type="email" class="form-control" name="email" /> <br />

      <label>Password</label>

      <input type="password" class="form-control" name="password" /> <br />

      <label>Confirm password</label>

      <input type="password" class="form-control" name="confirm\_password" /> <br />

      <button type="submit" class="btn btn-primary">Signup</button>

      <a href="/login" class="btn btn-secondary">Already have an account? Login Here</a>

    </form>

    </div>

 {% endblock%}

Home.html

{% extends 'base.html' %}

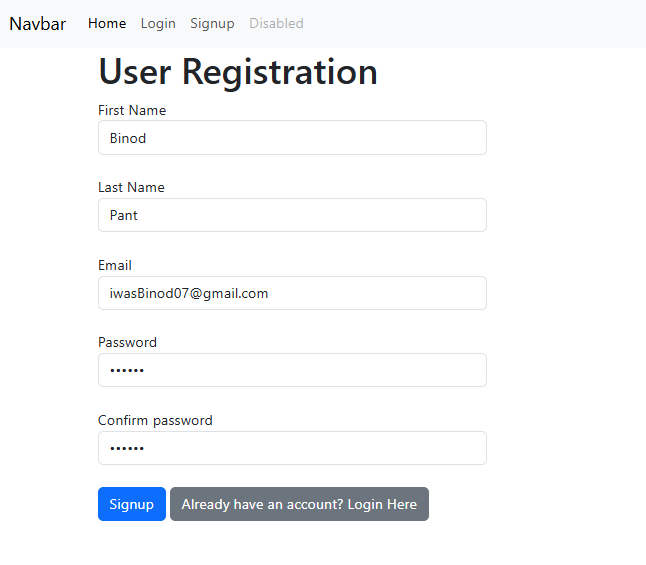
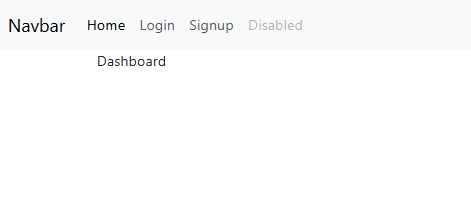
 {% block title %}Dashboard Page{% endblock%}

 {% block content %}

Dashboard

 {% endblock %}

**Output:**



**Lab 7:**

**LAB 7:**

**Title: Write a Flask application that connects to a MySQL database using SQLAlchemy. Create a table called students with columns id, name, age, and grade. Insert records and fetch data from the database to display on a webpage.**

**Code :**

**app.py**

from flask import Flask,render\_template,request,url\_for,redirect

from flask\_sqlalchemy import SQLAlchemy

app=Flask(\_\_name\_\_)

# mysql connection  ( using py mysql sriver)

app.config['SQLALCHEMY\_DATABASE\_URI']='mysql+pymysql://root:root@localhost/flask\_crud'

app.config['SQLALCHEMY\_TRACK\_MODIFICATIONS']=False

db=SQLAlchemy(app)

# Model

class Student(db.Model):

    id=db.Column(db.Integer,primary\_key=True)

    name=db.Column(db.String(100),nullable=False)

    age=db.Column(db.Integer,nullable=False)

    grade=db.Column(db.String(200),nullable=False)

@app.route('/')

def index\_page():

    data=students=Student.query.all()

    return render\_template('index.html',students=data)

@app.route('/create',methods=['GET','POST'])

def create():

    if request.method=='POST':

        name= request.form['name']

        age= request.form['age']

        grade= request.form['grade']

        new\_student=Student(name=name,age=age,grade=grade)

        db.session.add(new\_student)

        db.session.commit()

        return redirect(url\_for('index\_page'))

    return render\_template('create.html')

@app.route('/update/<int:id>',methods=['GET','POST'])

def update(id):

    student=Student.query.get\_or\_404(id)

    if request.method=="POST":

        student.name= request.form['name']

        student.age= request.form['age']

        student.grade= request.form['grade']

        db.session.commit()

        return redirect(url\_for('index.html'))

    return render\_template('update.html',student=student)

@app.route('/delete/<int:id>')

def delete(id):

    student=Student.query.get\_or\_404(id)

    db.session.delete(student)

    db.session.commit()

    return redirect(url\_for('index.html'))

if \_\_name\_\_=="\_\_main\_\_":

    with app.app\_context():

        db.create\_all()

    app.run(debug=True)

c**reate.html**

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Add student</title>

  </head>

  <body>

    <h2>Add student</h2>

    <form method="POST" action="/create">

      Name:<input type="text" name="name" required /><br />

      Age:<input type="number" name="age" required /><br />

      Grade:<input type="text" name="grade" required /><br />

      <input type="submit" value="Save" />

    </form>

    <a href="{{url\_for('index\_page')}}">Back</a>

  </body>

</html>

**Index.html**

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>Student list</title>

  </head>

  <body>

    <h2>Student list</h2>

    <a href="/create">Add Student</a>

    <table border="" width="100%">

      <tr>

        <th>ID</th>

        <th>Name</th>

        <th>Age</th>

        <th>Grade</th>

        <th>Actions</th>

      </tr>

      {% for s in students %}

      <tr>

        <td>{{s.id}}</td>

        <td>{{s.name}}</td>

        <td>{{s.age}}</td>

        <td>{{s.grade}}</td>

        <td>

          <a href="{{ url\_for('update', id=s.id) }}">Edit</a> |

          <a href="{{ url\_for('delete', id=s.id) }}">Delete</a> l̥

        </td>

      </tr>

      {% endfor %}

    </table>

  </body>

</html>

**update.html**

<!DOCTYPE html>

<html>

  <head>

    <title>Edit Student</title>

  </head>

  <body>

    <h2>Edit Student</h2>

    <form method="POST">

      Name:<input

        type="text"

        name="name"

        value="{{student.name}}"

        required

      /><br />

      Age:<input

        type="number"

        name="age"

        value="{{student.age}}"

        required

      /><br />

      Grade:<input

        type="text"

        name="grade"

        value="{{student.grade}}"

        required

      /><br />

      <input type="submit" value="Update" />

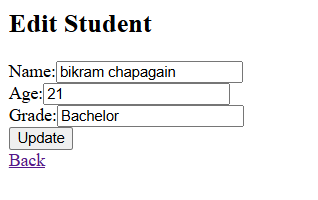
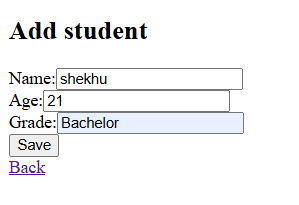
    </form>

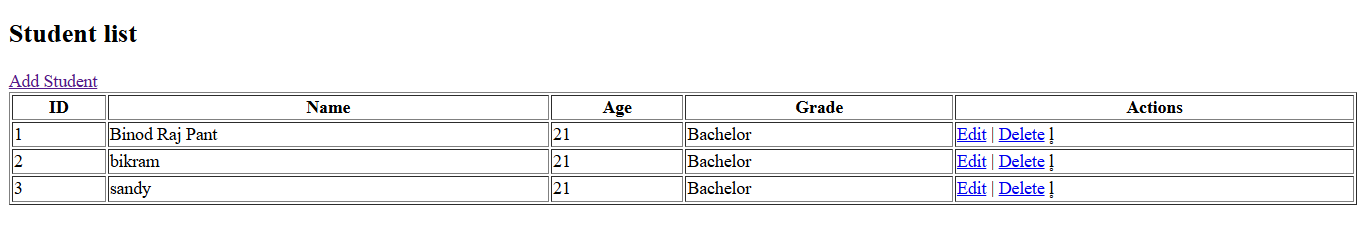
    <a href="{{ url\_for('index\_page') }}">Back</a>

  </body>

</html>

**Output:**





**LAB 8:**

**Title: Implement HTML drop-down to display dynamic options. Dynamic HTML tables product list and product details using flask.**

**Code :**

**app.py**

class Category(db.Model):

    id=db.Column(db.Integer,primary\_key=True)

    code=db.Column(db.String(20),nullable=False)

    name=db.Column(db.String(200),nullable=False)

    description=db.Column(db.String(500),nullable=False)

    product=relationship('Product' , back\_populates="category")

class Product(db.Model):

    id=db.Column(db.Integer,primary\_key=True)

    category\_id=db.Column(db.Integer,db.ForeignKey('category.id'))

    name=db.Column(db.String(100),nullable=False)

    quantity=db.Column(db.Numeric(10,2),nullable=False)

    rate=db.Column(db.Numeric(10,2),nullable=False)

    unit\_of\_measurement=db.Column(db.String(200),nullable=False)

    category=relationship('Category',back\_populates='product')

@app.route('/add\_Category',methods=['POST','GET'])

def add\_category():

    if request.method=='POST':

        code=request.form.get('code')

        name=request.form.get('name')

        description=request.form.get('description')

        category=Category(code=code,name=name,description=description)

        db.session.add(category)

        db.session.commit()

    return render\_template('add\_category.html')

@app.route('/add\_product',methods=['POST','GET'])

def add\_product():

    if request.method=='POST':

        category=request.form.get('category\_id')

        name=request.form.get('name')

        qyt=request.form.get('qyt')

        rate=request.form.get('rate')

        unit=request.form.get('unit')

        product=Product(category\_id=category,name=name,quantity=qyt,rate=rate,unit\_of\_measurement=unit)

        db.session.add(product)

        db.session.commit()

    category=Category.query.all()

    return render\_template('add\_product.html',category=category)

**base.html**

<!DOCTYPE html>

<html lang="en">

  <head>

    <meta charset="UTF-8" />

    <meta name="viewport" content="width=device-width, initial-scale=1.0" />

    <title>{%block title%} {%endblock%}</title>

    <link

      href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.7/dist/css/bootstrap.min.css"

      rel="stylesheet"

      integrity="sha384-LN+7fdVzj6u52u30Kp6M/trliBMCMKTyK833zpbD+pXdCLuTusPj697FH4R/5mcr"

      crossorigin="anonymous"

    />

  </head>

  <body>

    <nav class="navbar navbar-expand-lg bg-body-tertiary">

      <div class="container-fluid">

        <a class="navbar-brand" href="{{url\_for('index\_page')}}">CRUD</a>

        <button

          class="navbar-toggler"

          type="button"

          data-bs-toggle="collapse"

          data-bs-target="#navbarNav"

          aria-controls="navbarNav"

          aria-expanded="false"

          aria-label="Toggle navigation"

        >

          <span class="navbar-toggler-icon"></span>

        </button>

        <div class="collapse navbar-collapse" id="navbarNav">

          <ul class="navbar-nav">

            <li class="nav-item">

              <a

                class="nav-link active"

                aria-current="page"

                href="{{url\_for('index\_page')}}"

                >Home</a

              >

            </li>

            <li class="nav-item">

              <a class="nav-link" href="{{url\_for('create')}}">Create</a>

            </li>

            <li class="nav-item">

              <a class="nav-link" href="{{url\_for('add\_category')}}"

                >Add Category</a

              >

            </li>

            <li class="nav-item">

              <a class="nav-link" href="{{url\_for('add\_product')}}"

                >Add Product</a

              >

            </li>

          </ul>

        </div>

      </div>

    </nav>

    <div class="container">{%block content%} {%endblock%}</div>

    <script

      src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.7/dist/js/bootstrap.bundle.min.js"

      integrity="sha384-ndDqU0Gzau9qJ1lfW4pNLlhNTkCfHzAVBReH9diLvGRem5+R9g2FzA8ZGN954O5Q"

      crossorigin="anonymous"

    ></script>

    >

  </body>

</html>

**add\_product.html**

{% extends 'base.html'%} {%block title%}add product{%endblock%} {%block

content%}

<h1>Add Product</h1>

<form action="{{url\_for('add\_product')}}" method="post">

  <label for="" class="form-label">Category:</label>

  <select class="form-select" name="category\_id">

    <option selected>Select Category</option>

    {%for c in category%}

    <option value="{{c.id}}">{{c.name}}</option>

    {%endfor%}

  </select>

  <label for="" class="form-label">name:</label>

  <input type="text" class="form form-control" name="name" /><br />

  <label for="">Qyt</label>

  <input type="number" class="form form-control" name="qyt" /><br />

  <label for="">Rate</label><br />

  <input type="number" class="form form-control" name="rate" /><br />

  <label for="">Unit of Measurement</label>

  <input type="text" class="form form-control" name="unit" /><br />

  <input

    type="submit"

    class="btn btn-success"

    name="measurement"

    value="Create"

  />

</form>

{%endblock%}

**add\_category.html**

{%extends 'base.html'%} {%block title%}add Catogery{%endblock%} {%block

content%}

<h1>Add Catogery</h1>

<form action="{{url\_for('add\_category')}}" method="post">

  <label for="" class="form-label">Category Code:</label>

  <input type="text" class="form form-control" name="code" id="" /><br />

  <label for="">Name</label>

  <input type="text" class="form form-control" name="name" id="" /><br />

<label for="">Discription</label><br />

  <textarea

    name="description"

    id=""

    class="form-control"

    placeholder="Leave a Discription here"

  ></textarea>

  <br />

  <input type="submit" class="btn btn-success" value="Create" />

</form>

{%endblock%}

**Output:**

